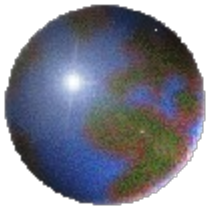


Managing and Scoring Sustainability in your Project

The future belongs to those who understand that doing more with less is compassionate, prosperous, and enduring, and thus more intelligent, even competitive.
Paul Hawken, director, TNS US

Balanced Scorecard (BSC)

FINANCIAL OUTCOMES

- Operating/maintenance costs
- Cost of building related litigation
- Rental/resale value of property
- Costs of churn
- Costs of absenteeism
- Costs of turnover

STAKEHOLDER RELATIONS

- Public image and reputation
- Customer satisfaction
- Community outreach and education
- Knowledge transfer
- Local economic impact
- Community livability

BUSINESS PROCESS OUTCOMES

- Process innovation
- Work process efficiency
- Product quality
- Time to market

HUMAN CAPITAL DEVELOPMENT

- Quality of work life
- Work satisfaction
- Personal productivity
- Social and psychological well being
- Ability to attract and retain high quality workers
- Absenteeism

Heerwagon, Environmental Design + Construction, Jul-Aug 02

Successful Green Projects

- Plan for success
- Design for success
- Construct for success
- Fund for success
- Operate for success
- Communicate results of success

Plan for Success

- Define Success:
  - Performance-based goals & guidelines
  - Project benchmarking (SPiRiT, LEED™ & others)
- Assemble the Team for Success
  - Integrated team
    - Credentials in best practice areas
    - LEED certification and experience
    - Modeling and analytical tools capability
    - Green contracts and performance incentive

Plan for Success

- Manage for Success
  - Take advantage of the full scope of work: typical project management plus green leadership and team building.
  - Use an integrated and collaborative development process.
  - Consider outside partners: Industry/Other Government/NGO’s

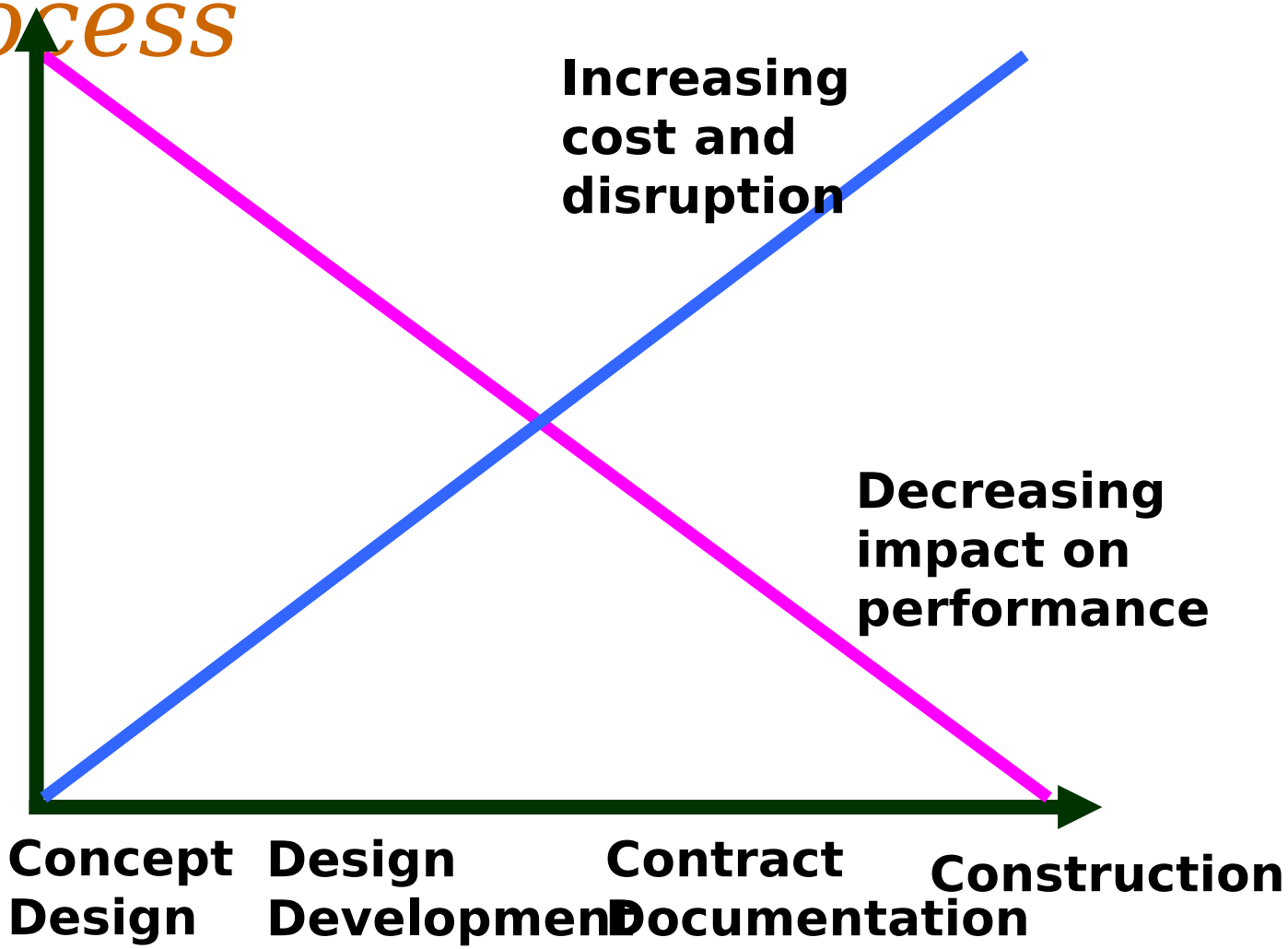
Design & Construct for Success

- Project review
- Eco-Charrette
- Design development
- Construction
- Build out
- Green Commissioning

Project Review: Define Success

- Sustainable coordinator must meet with user/design team early in process:
  - Identify environmental motivations and issues to be addressed.
  - Understand goals, objectives, barriers to success.
  - Determine target SPiRiT rating level.
- Discuss greening impact on the project scope, schedule, cost, & team responsibilities.

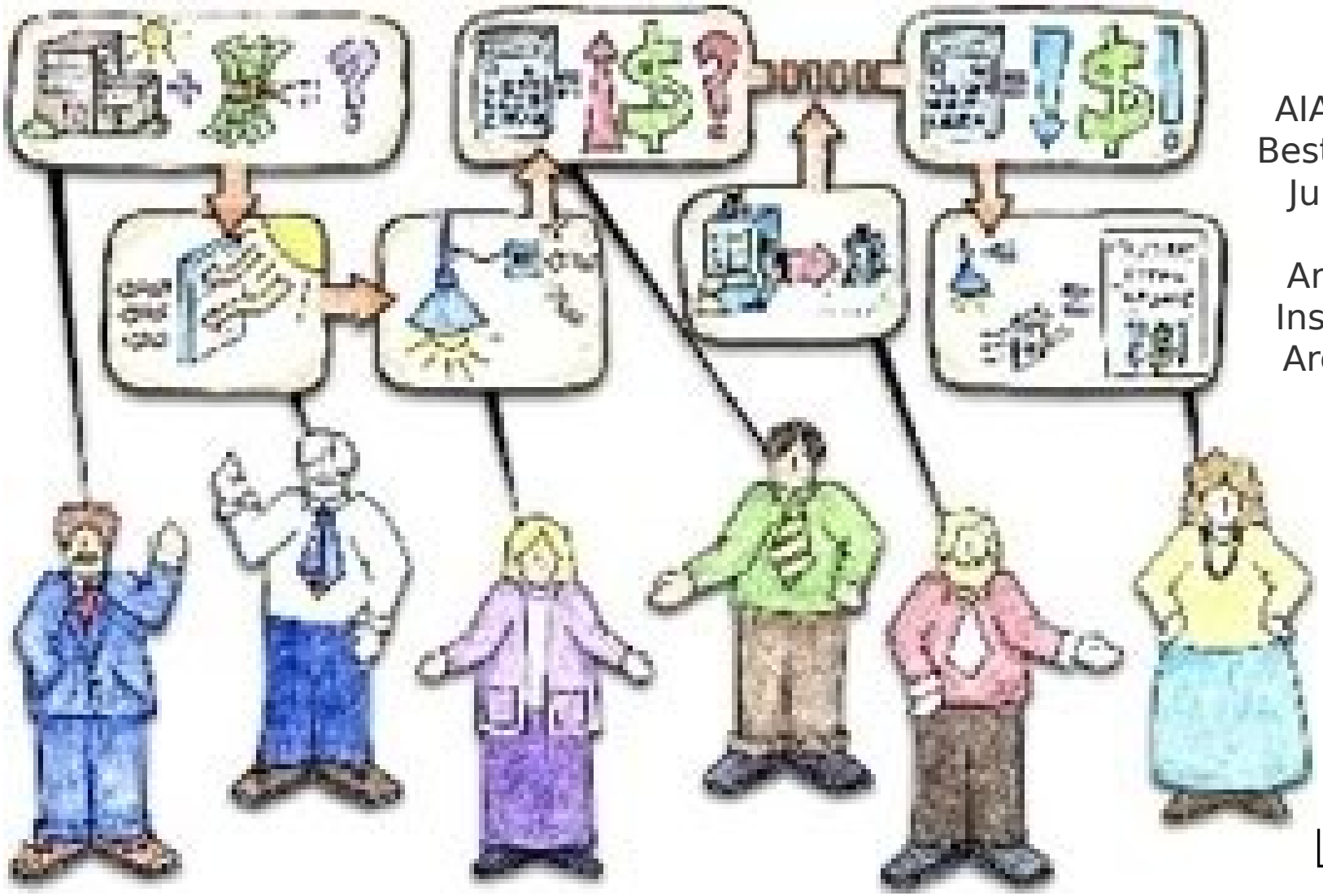
Interventions in the Design Process



Eco-Charrette

- Players: client, architects, engineers, advocates, occupants, building officials.
- Gain buy-in and consensus.
- Explore environmental issues.
- Set project goals and vision.
- Propose alternatives that meet requirements and are synergistic.
- Identify required modeling and resource allocation.

Advantages of Integrated Design



AIArchitect
Best Practice
July 2002
The
American
Institute of
Architects

Eco-Charrette Tips

- Use SPiRiT rating system as an outline to facilitate greening.
- Use an outside facilitator that is specialized in integrated design.
- Present examples of resources and ways to track costs and benefits of modeling.
- Establish tasks/responsibilities/milestones & schedule and monitor progress toward goals.

Benefits of an Eco-Charrette

- Collectively create profound sustainable development goals, measurable objectives in place, and the process to achieve goals are is developed.
- Results in a better project.
- Develops a more cohesive design team.
- Far-reaching decisions are made more quickly, saving time and money.
- You get to satisfy and delight users.

Concept Design Development

- Review design alternatives.
- Perform first cost analyses.
- Gain resolution – choose approach.
- Determine evaluation criteria.
- Identify SPiRiT project potential and document with preliminary score card.

Concept Design Tips

- Review LEED™ Reference Guide Bibliography and Resource List and other sustainable design resources for information and ideas.
- Choose evaluation criteria based on your credits.
- Apply situational analysis skills – find out what is most appealing to the users/DPW/local command.

Design Development

- Perform modeling and analyses.
- Document design criteria requirements that for the basis design performance.
- Continually monitor and assess progress towards defined goals.

Sustainable Coordinator Tips

- Understand what the users want.
- Establish financial rules (NBS Handbook 135, 10CFR435).
- Define lifecycle cost analysis baseline.
- Be aware of strategies to address environmental motivations.
- Create a tabbed binder to hold all letters, cut sheets submittals, product data sheets, analysis results, etc.

Performance Assurance

- Sustainability should be addressed at every project meeting
- Ensure sustainability design elements are indicated as critical on drawings and specifications
  - Unique aspects of the design
  - Construction waste management
  - Commissioning requirements
- Designate person to track details

Initial SPiRiT Scoring Charrette

- First formal scoring of project.
- Hosted by installation – all key players present.
- Done at the end of final design to verify design meets intent of SPiRiT and the results of the eco-charrette have been incorporated.
- Should result in a go/no go decision on construction.
- This is a collaborative process – reach consensus on credit achievements.
- Complete Initial Project SPiRiT Scoring Summary Sheet and add to Project SPiRiT Scoring Notebook

"Construction is the stage in which all of the visions, planning and design for a development are brought to fruition….This is an exciting, but also a high-risk stage of development, and 'doing it green' can be seen as adding one more element of risk or challenge.

Even the best-laid plans of a green designer can fail if construction is done in an uniformed or irresponsible manner."

Construction

- Designate contractor coordinator.
- Designate subcontractor coordinator.
- Adhere to design criteria established in design documents.
- Monitor and photograph progress.
- Collect documentation.
- If you want documentation, make it a pay request line item in construction contracts.

Construction Tips

- Assign GC with responsibility for sustainable elements.
- The design/construct paradigm may make all of this easier.
- Continue to remind them of assignments and special directions at project meetings.
- If you collect documentation, get it as you go – don’t wait until the end.

Build out & Commissioning

- The battle can be lost here.
- Build out requires same careful selection of materials and thoughtful design.
- Commissioning is an imperative:
  - Achievement of energy savings.
  - User satisfaction.

Green Commissioning

- Commissioning is a systematic process.
- It begins in design/specification phase and extents through warranty period.
- Non-mechanical features: Design intent/Clear specifications/Submittal review/Correct installation.
- Ensure, through documented verification, that systems perform interactively, according to contract documents and the design intent is fully realized.

Green Commissioning

- Green commissioning goes beyond standard commissioning techniques.
- Innovative and new concepts require additional attention – HVAC system margins for error are gone and unique control strategies must be tested.
- Contractors must be monitored.

Fund for Success

- Use lifecycle costing & budgeting.
- Leverage performance efficiencies forward to first costs.
- Look for additional “green” capital sources:
  - Utility incentives - http://www.facilitiesnet.com/fn/NS/NS3n2cd.html|ticket=12345678901234567891157118 95
  - State programs - http://www.dsireusa.org/
  - http://www.fundinggreenbuildings.com/
  - ESPCs and UESCs
- Know the return on investment.

Operate for Success

- Put in place the tools to:
  - Employ full benchmarking.
  - Use Life-cycle commissioning.
  - Use EMCS for monitoring and verification.
  - Accomplish continuous adjustments and effective improvements.
  - Educate & train train staff.
  - Utilize green housekeeping.
- Transition to LEED EB after 5 years.

Communicate Success

- Showcase features:
  - Occupants
  - Visitors
- Benchmark results:
  - Energy Star
  - Other standards
- Public outreach:
  - Media
  - Schools

Cusano Environmental Education Center

Final SPiRiT Scoring Charrette

- Second formal scoring of project.
- Hosted by installation – all key players present.
- Done once building has been commissioned and achieved beneficial occupancy to verify design intent has been implemented and the project meets intended SPiRiT score.
- This is a collaborative process – reach consensus on credit achievements.
- Complete Final Project SPiRiT Scoring Summary Sheet and add to Project SPiRiT Scoring Notebook.
- Compile a charrette summary with lessons learned and add to notebook.

Process for a Successful Project

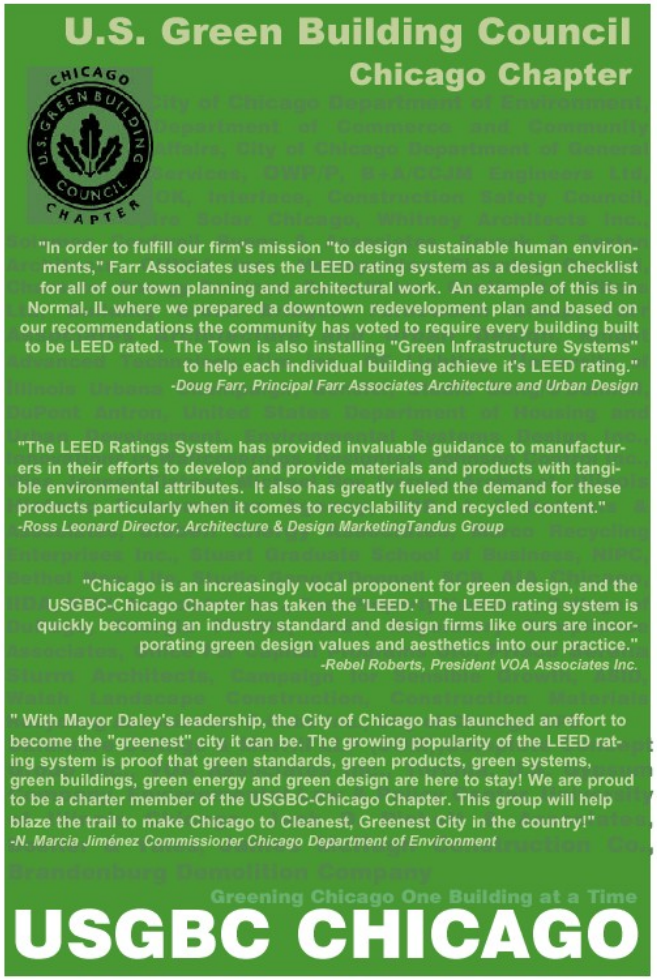
Plan	Design/ Construct	Fund	Operate	Communicate
Define Success	Eco-Charrette	Lifecycle	Benchmarking	Showcase Features
Team for Success	Schematic Design	Leverage Funding	Green Commissioning	Benchmark Results
Manage for Success	Design Development	Outside Capital	M&V	Public Outreach
	Construction	ROI	Continuous Improvements	

Resources

- http://www.gggc.state.pa.us/building/default.htm
- http://www.tjcog.dst.nc.us/hpgtrpf.htm
- http://www.wbdg.org/
- http://greenbuilding.ca/GBIC.htm
- http://eber.ed.ornl.gov/
- http://fcn.state.fl.us/fdi/edesign/

What can I do?

- Change behavior:
  - Individual
  - Office
- Change projects:
  - Project development and management.
  - Prepare client for follow-through.
- Change communities:
  - Start/join GBC chapter.
  - Encourage code upgrades and use of LEED™.
  - Start a “Green Builder” Program.


U.S. Green Building Council
Chicago Chapter
"In order to fulfill our firm's mission "to design sustainable human environments," Farr Associates uses the LEED rating system as a design checklist for all of our town planning and architectural work. An example of this is in Normal, IL where we prepared a downtown redevelopment plan and based on our recommendations the community has voted to require every building built to be LEED rated. The Town is also installing "Green Infrastructure Systems" to help each individual building achieve it's LEED rating."
-Doug Farr, Principal Farr Associates Architecture and Urban Design
"The LEED Ratings System has provided invaluable guidance to manufacturers in their efforts to develop and provide materials and products with tangible environmental attributes. It also has greatly fueled the demand for these products particularly when it comes to recyclability and recycled content."
-Ross Leonard Director, Architecture & Design MarketingTandus Group
"Chicago is an increasingly vocal proponent for green design, and the USGBC-Chicago Chapter has taken the 'LEED.' The LEED rating system is quickly becoming an industry standard and design firms like ours are incorporating green design values and aesthetics into our practice."
-Rebel Roberts, President VOA Associates Inc.
" With Mayor Daley's leadership, the City of Chicago has launched an effort to become the "greenest" city it can be. The growing popularity of the LEED rating system is proof that green standards, green products, green systems, green buildings, green energy and green design are here to stay! We are proud to be a charter member of the USGBC-Chicago Chapter. This group will help blaze the trail to make Chicago to Cleanest, Greenest City in the country!"
-N. Marcia Jiménez Commissioner Chicago Department of Environment
Greening Chicago One Building at a Time
USGBC CHICAGO

Nature as Paradigm

"Nature exists in a dynamic equilibrium, ever-changing, yet providing a consistency of life-supporting resources and services that humans rely upon. If we ignore this deep integration between people and the planet, we do so at our own peril. There is no reason to ignore the natural world when we make business decisions. In-deed, there are profound and undeniable reasons for embracing nature."

George Basile, The Natural Step, 2000